

the requirements of paragraph (b) of this section.

[Doc. No. 6258, 29 FR 19198, Dec. 31, 1964, as amended by Amdt. 121-9, 30 FR 8572, July 7, 1965]

**§ 121.197 Airplanes: Turbine engine powered: Landing limitations: Alternate airports.**

No person may list an airport as an alternate airport in a dispatch or flight release for a turbine engine powered airplane unless (based on the assumptions in § 121.195 (b)) that airplane at the weight anticipated at the time of arrival can be brought to a full stop landing within 70 percent of the effective length of the runway for turbo-propeller powered airplanes and 60 percent of the effective length of the runway for turbojet powered airplanes, from a point 50 feet above the intersection of the obstruction clearance plane and the runway. In the case of an alternate airport for departure, as provided in § 121.617, allowance may be made for fuel jettisoning in addition to normal consumption of fuel and oil when determining the weight anticipated at the time of arrival.

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**§ 121.198 Cargo service airplanes: Increased zero fuel and landing weights.**

(a) Notwithstanding the applicable structural provisions of the airworthiness regulations but subject to paragraphs (b) through (g) of this section, a certificate holder may operate (for cargo service only) any of the following airplanes (certificated under part 4b of the Civil Air Regulations effective before March 13, 1956) at increased zero fuel and landing weights—

- (1) DC-6A, DC-6B, DC-7B, and DC-7C; and
- (2) L1049B, C, D, E, F, G, and H, and the L1649A when modified in accordance with supplemental type certificate SA 4-1402.

(b) The zero fuel weight (maximum weight of the airplane with no disposable fuel and oil) and the structural landing weight may be increased beyond the maximum approved in full

compliance with applicable regulations only if the Administrator finds that—

- (1) The increase is not likely to reduce seriously the structural strength;
- (2) The probability of sudden fatigue failure is not noticeably increased;
- (3) The flutter, deformation, and vibration characteristics do not fall below those required by applicable regulations; and
- (4) All other applicable weight limitations will be met.

(c) No zero fuel weight may be increased by more than five percent, and the increase in the structural landing weight may not exceed the amount, in pounds, of the increase in zero fuel weight.

(d) Each airplane must be inspected in accordance with the approved special inspection procedures, for operations at increased weights, established and issued by the manufacturer of the type of airplane.

(e) Each airplane operated under this section must be operated in accordance with the passenger-carrying performance operating limitations prescribed in this part.

(f) The Airplane Flight Manual for each airplane operated under this section must be appropriately revised to include the operating limitations and information needed for operation at the increased weights.

(g) Except as provided for the carrying of persons under § 121.583 each airplane operated at an increased weight under this section must, before it is used in passenger service, be inspected under the special inspection procedures for return to passenger service established and issued by the manufacturer and approved by the Administrator.

**§ 121.199 Nontransport category airplanes: Takeoff limitations.**

(a) No person operating a nontransport category airplane may take off that airplane at a weight greater than the weight that would allow the airplane to be brought to a safe stop within the effective length of the runway, from any point during the takeoff before reaching 105 percent of minimum control speed (the minimum speed at which an airplane can be safely controlled in flight after an engine

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becomes inoperative) or 115 percent of the power off stalling speed in the takeoff configuration, whichever is greater.

(b) For the purposes of this section—

(1) It may be assumed that takeoff power is used on all engines during the acceleration;

(2) Not more than 50 percent of the reported headwind component, or not less than 150 percent of the reported tailwind component, may be taken into account;

(3) The average runway gradient (the difference between the elevations of the endpoints of the runway divided by the total length) must be considered if it is more than one-half of 1 percent;

(4) It is assumed that the airplane is operating in standard atmosphere; and

(5) The *effective length of the runway* for takeoff means the distance from the end of the runway at which the takeoff is started to a point at which the obstruction clearance plane associated with the other end of the runway intersects the runway centerline.

[Doc. No. 6258, 29 FR 19198, Dec. 31, 1964, as amended by Amdt. 121–132, 41 FR 55475, Dec. 20, 1976]

### § 121.201 Nontransport category airplanes: En route limitations: One engine inoperative.

(a) Except as provided in paragraph

(b) of this section, no person operating a nontransport category airplane may take off that airplane at a weight that does not allow a rate of climb of at least 50 feet a minute, with the critical engine inoperative, at an altitude of at least 1,000 feet above the highest obstruction within five miles on each side of the intended track, or 5,000 feet, whichever is higher.

(b) Notwithstanding paragraph (a) of this section, if the Administrator finds that safe operations are not impaired, a person may operate the airplane at an altitude that allows the airplane, in case of engine failure, to clear all obstructions within 5 miles on each side of the intended track by 1,000 feet. If this procedure is used, the rate of descent for the appropriate weight and altitude is assumed to be 50 feet a minute greater than the rate in the approved performance data. Before approving such a procedure, the Adminis-

trator considers the following for the route, route segment, or area concerned:

(1) The reliability of wind and weather forecasting.

(2) The location and kinds of navigation aids.

(3) The prevailing weather conditions, particularly the frequency and amount of turbulence normally encountered.

(4) Terrain features.

(5) Air traffic control problems.

(6) Any other operational factors that affect the operation.

(c) For the purposes of this section, it is assumed that—

(1) The critical engine is inoperative;

(2) The propeller of the inoperative engine is in the minimum drag position;

(3) The wing flaps and landing gear are in the most favorable position;

(4) The operating engines are operating at the maximum continuous power available;

(5) The airplane is operating in standard atmosphere; and

(6) The weight of the airplane is progressively reduced by the anticipated consumption of fuel and oil.

### § 121.203 Nontransport category airplanes: Landing limitations: Destination airport.

(a) No person operating a nontransport category airplane may take off that airplane at a weight that—

(1) Allowing for anticipated consumption of fuel and oil, is greater than the weight that would allow a full stop landing within 60 percent of the effective length of the most suitable runway at the destination airport; and

(2) Is greater than the weight allowable if the landing is to be made on the runway—

(i) With the greatest effective length in still air; and

(ii) Required by the probable wind, taking into account not more than 50 percent of the headwind component or not less than 150 percent of the tailwind component.

(b) For the purposes of this section, it is assumed that—

(1) The airplane passes directly over the intersection of the obstruction clearance plane and the runway at a